

## **REMARKS**

Entry of the foregoing, reexamination and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

The description of the disposition of claims appearing in the Office Action Summary dated October 17, 2007, contains an error. Specifically, it is stated that claims 1-42 were pending. However, claims 1-23 were canceled in a Preliminary Amendment filed on July 18, 2006. Thus, at the time the Official Action was rendered on October 17, 2007, only claims 24-42 were pending. By the present response, claims 24, 30, 32, 37, 38, 40 and 42 have been amended, claims 28-29 and 35-36 canceled, and claim 43 has been added. Thus, upon entry of the present response, claims 24-27, 30-34 and 37-43 are pending and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: page 2, line 29 through page 3, line 9; page 4, lines 1-4; page 8, lines 12-24; page 10, lines 20-26; and the original claims.

## ***CLAIM OBJECTIONS***

Claim 35 is objected to because of an informality. Claim 35 has been amended in a non-narrowing manner to address the objection. Thus, reconsideration and withdrawal of the objection is respectfully requested.

**CLAIM REJECTIONS UNDER 35 U.S.C. §112**

Claims 41-42 stand rejected under 35 U.S.C. §112, second paragraph, on the grounds set forth in paragraph 3 of the Official Action.

By the present response, applicants have amended claim 41 in a manner which addresses the above-noted rejection, without narrowing the scope thereof. Therefore, reconsideration and withdrawal of the rejection is respectfully requested.

**OBVIOUSNESS-TYPE DOUBLE PATENTING**

Claims 24-37 and 39-42 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 31-58 of co-pending Application No. 10/523,420 to Leite et al. (hereafter "*Leite et al.*") in view of JP 07-145511 to Imamura on the grounds set forth in paragraph 5 of the Official Action.

Applicants respectfully traverse the grounds for rejection. In particular, it is asserted in paragraph 5 of the Official Action that *Leite et al.* "teaches a flame-retardant composition comprising a flame-retardant organophosphorous compound . . . ." However, the teachings of *Leite et al.* cannot be used against the claims of the present invention to support a double patenting rejection. Instead, the only relevant inquiry with respect to the contents of *Leite et al.* is with respect to what is claimed. Thus, the grounds for rejection clearly rely upon content which is not probative to the issue of whether or not the claims of the present application are patentably distinct from the claims of *Leite et al.*

In any event, in order to expedite prosecution, applicants submit herewith a duly executed Terminal Disclaimer thereby obviating the above-noted grounds for rejection.

***CLAIM REJECTIONS UNDER 35 U.S.C. §103***

Claims 24-28, 31, 33-37 and 39 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,025,421 to Atarashi et al. (hereafter "*Atarashi et al.*") in view of JP 07-145511 A to Imamura (hereafter "*Imamura*") on the grounds set forth in paragraph 8 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

The present invention is directed to yarns, fibers or filaments which possess fire resistance and are made of thermoplastic materials. As discussed, for example, on page 2 of the present specification, organophosphorous compounds have been added to thermoplastics before conversion into yarns or fibers. However, the addition of such compounds has proven difficult due to the relatively high conversion temperatures and interaction with a viscous medium at high temperatures. Other techniques for imparting flame resistance have included the treatment of articles or surfaces with composition or finishes comprising flame-retardant compounds. However, such treatments require a specific treatment of the surfaces of the material and the particular, the compounds which are deposited or trapped on the surface are capable of being removed during cleaning. Thus, one objective of the present invention is to incorporate flame-retardant compounds into a thermoplastic material during the process for manufacture of these yarns, fibers and filaments, while

avoiding the difficulties experienced by conventional techniques for adding such flame-retardant compounds.

A yarn or fiber formed according to the principles of the present invention is set forth in amended claim 24. Amended claim 24 recites:

*24. Yarns or fibres made of polymer, said polymer being selected from the group consisting of: polypropylene, poly(ethylene terephthalate), copolymers of ethylene terephthalate and of isophthalic 5- sulphonic acid, poly(butylene terephthalate), poly(propylene terephthalate), aliphatic polyamides and semiaromatic polyamides, said polymer comprising an additive possessing flame-retardant properties composed of at least particles of a solid substrate on which a flame-retardant compound is adsorbed, wherein said substrate is in the form of porous granules or agglomerates before being added to the polymer and said granules or agglomerates exhibit a pore volume of at least 0.5 ml/g.*

Neither *Atarashi et al.* nor *Imamura*, taken alone or in combination, disclose or suggest the yarn or fibers of claim 24. In particular, by the present response, the substance of dependent claim 29 has been added to claim 24 by amendment. Since the grounds for rejection do not include a rejection of dependent claim 29, there is an implicit acknowledgement that the proposed combination of prior art references do not disclose or suggest this aspect of the presently claimed invention.

Claim 38 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Atarashi et al.* in view of *Imamura* as applied to claim 35 and further in view of *Physical Constants of Various Polyamides* by Mehta (hereafter "*Mehta*") and *Encyclopedia of Textile Finishing* by Rouette (hereafter "*Rouette*") on the grounds set forth in paragraph 9 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

By the present response, the substance of dependent claims 28 and 29 have been added to claim 24. Since the substance of claims 28 and 29 have not been

rejected on the above-noted grounds for rejection, there is an implicit acknowledgement that the subject matter is neither disclosed nor suggested by the proposed combination of prior art references.

Claims 29-30 and 32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Atarashi et al.* in view of *Imamura* as applied to claims 28 and 31 and further in view of U.S. Patent No. 4,233,199 to Abolins et al. (hereafter "*Abolins et al.*") on the grounds set forth in paragraph 10 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

*Atarashi et al.* discloses a flame-retardant thermoplastic resin composition which includes an inorganic filler which has been surface- treated with a phosphate.

*Imamura* teaches a polyester monofilament having good resistance to hydrolyzing and flexure fatigue rendering it suitable for use in paper-making canvas. The monofilament comprises PTFE resin powder and PET. *Abolins et al.* is directed to a flame resistant thermoplastic composition comprising polyethylene ester resins and styrene resins that include a combination of flame retarding organophosphorous compound and a finely particulate solid material of porous character.

However, contrary to the assertions contained in paragraph 10 of the Official Action, neither *Atarashi et al.*, *Imamura*, or *Abolins et al.* disclose or suggest the yarns or fibers as set forth in amended claim 24. In particular, as evident from the above, amended claim 24 requires an additive in the form of a solid substrate having the form of "porous granules or agglomerates," before being added to the polymer and said granules or agglomerates exhibit a pore volume of at least 0.5 ml/g. By contrast, neither *Atarashi et al.*, *Abolins et al.*, or *Imamura* disclose a solid substrate in the form of granules or agglomerates. Thus, the proposed combination of

references fail to disclose or suggest the invention of amended claim 24 for at least this reason. Moreover, since none of the applied references disclose the particular form of solid substrate required by the presently claimed invention, they also do not contain any teachings relevant to the recited pore volume of this form of solid substrate. Thus, the proposed combination of references are deficient for at least this additional reason.

Finally, as evident from the above, claim 24 has been amended to recite a specific type of polymer composition. By contrast, *Abolins et al.* teaches a resin made from polyphenylene ester and/or styrene-type resin. *Imamura* is limited to polyester monofilament. Thus, contrary to the assertions contained in paragraph 10 of the Official Action, (1) there would be no motivation for one of ordinary skill in the art to combine the teachings of *Abolins et al.* and *Imamura* due to the differences in the thermoplastic polymer compositions and the different applications thereof, and (2) there is no explanation offered in the grounds for rejection as to how one of ordinary skill in the art would have arrived at the particular polymer composition now recited in amended claim 24 given the fact that two out of the three prior art references teach away from the type of polymer now recited as forming the yarn of filament of amended claim 24. Thus, in light of the above, it is respectfully submitted that claim 24, as amended, is neither disclosed nor suggested by the proposed combination of *Atarashi et al.*, *Imamura*, and *Abolins et al.*

Claims 40-42 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Imamura* in view of *Atarashi et al* on the grounds set forth in paragraph 11 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

**CONCLUSION**

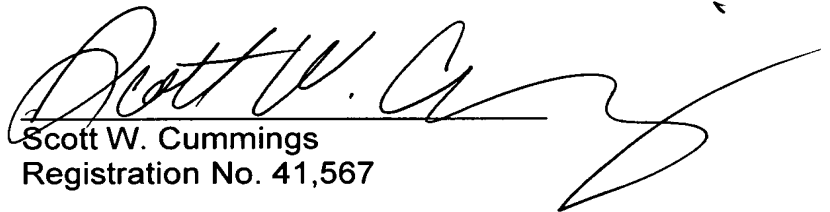
From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: February 19, 2008

By:

  
Scott W. Cummings  
Registration No. 41,567

P.O. Box 1404  
Alexandria, VA 22313-1404  
703 836 6620